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FAMILY SAFETY NETS DURING ECONOMIC TRANSITION: A CASE STUDY OF POLAND

September, 1994

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Working Paper No. 134

This publication was made possible through support provided by the U.S. Agency for International Development, under Cooperative Agreement **No. DHR-0015-A-00-0031-00.**

The views and analyses in the paper do not necessarily reflect the official position of the IRIS Center or the **U.S.A.I.D.**

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Can those Eastern European families who are most severely impoverished during the transition from socialism to capitalism rely on private family safety nets for support? Examples of such safety nets are cash or in-kind gifts transferred to lower-income households from more fortunate relatives or friends. Answering this question is critical for evaluating the likely success of economic transition in the Eastern bloc. Governments are currently hard-pressed to raise social spending, and, without substantial aid from the West, they could not achieve much in the way of equalizing **the income distribution. But family networks are an alternative to governments as a means of income redistribution.**

Knowing the size of the informal, private safety net is critical because private transfers determine the necessary scope of public assistance to the poor once private mechanisms have been exhausted. Despite their potential importance we know little of the **basic facts about** such networks in Eastern Europe, let alone how they might function. Researchers have only begun to explore household survey micro-data containing information about private transfers for Eastern European countries.

We fill, this gap by analyzing a newly available household survey for Poland, the Household Budget Survey (HBS). The **HBS is a** large, representative household survey that has been conducted in Poland every year since 1957. The HBS has measures of both cash and in-kind private transfers given and received, as well as income, schooling, **health** and demographic information and housing conditions.

The results indicate that private transfers are an important part of Polish income. Gross receipts of private transfers account for 4 percent of total income and, among recipients, net receipts comprise 9 percent of their income. Nearly two-thirds of the households in our sample are involved in inter-household private transfers.

Private transfers respond to the economic and demographic status. They flow from high to low-income households, and are targeted to young couples, large families and those experiencing illness or injury. They **vary by age in a way that suggests** responsiveness to liquidity constraints.

We simulated the impact of earnings loss on private transfers, using data for 1987. In the face of lost earnings of the household head, estimated private transfer receipts more than double. The boost in private transfers would fill about 11 percent of the income gap left by the lost earnings. For single-earners, the

figure is 21 percent. However, post-transition data for 1992 indicate that, though the incidence of private transfers was the same, the average amount was only two-thirds of its 1987 value. Further, while estimated transfer functions were for the most part stable between 1987 and 1992, transfer amounts became less responsive to pre-transfer income in 1992. Our results suggest that family networks weakened somewhat after the economic transition.

Final Report

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A Case Study of Poland

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This work was supported by a grant from IRIS (Institutional Reform and the Informal Sector) at the University of Maryland. We wish to thank Zekeriya Eser and John Jordan for expert research assistance. The views expressed here are the authors' own and should not be attributed to the Government of Poland, IRIS or the World Bank.

Summary: Family Safety Nets During Economic Transition: A Case Study of Poland

Donald Cox, Emmanuel Jimenez, and Wlodek Okrasa*

Can those Eastern European families who are most severely impoverished during the transition from socialism to capitalism rely on private family safety nets for support? Examples of such safety nets are cash or in-kind **gifts** transferred to lower-income households from more fortunate relatives or friends. Answering this question is critical for evaluating **the likely success** of **economic** transition in the Eastern bloc. Governments are currently hard-pressed to raise social spending, and, without substantial aid from the West, they could not achieve much in the way of equalizing the income distribution. But family networks are an alternative to **governments** as a means of income redistribution.

Knowing the size of the informal, private safety net is critical because private transfers determine the necessary scope of public assistance to the poor once private mechanisms have been exhausted. Despite their potential importance we know little of the basic facts about such networks in Eastern Europe, let alone how they might function. Researchers have only begun to explore household survey micro-data containing information about private **transfers for Eastern European countries**.

We **fill** this gap by analyzing a newly available household survey for Poland, the Household Budget Survey (**HBS**). The HBS is a large, representative household survey that has been conducted in Poland every year since 1957. The HBS has **measures of** both cash and in-kind private transfers given and received, as well as income, schooling, health and demographic information and housing conditions.

The results indicate that private transfers are an important part of Polish income. Gross receipts of private transfers account for 4 percent of total income and, among recipients, net receipts comprise 9 **percent** of their income. **Nearly** two-thirds of the households in our sample are involved in inter-household private transfers.

Private **transfers respond** to the economic **and** demographic status. They flow **from** high to low-income households, and are targeted to young couples, large families and those experiencing illness or injury. They vary by age in a way that suggests responsiveness to liquidity constraints.

We simulated the impact of earnings loss on private transfers, using data for 1987. **In** the face of lost earnings of the household head, estimated private transfer receipts more than double. The boost in private **transfers** would fill about 11 percent of the income gap left by the lost earnings. For single-earners, the figure is 21 percent. However, **post-**transition data for 1992 indicate that, though the incidence of private transfers was the same, the average amount was only two-thirds of its 1987 value. Further, **while estimated** transfer functions were for the most part stable between 1987 and 1992, transfer amounts became less responsive to pre-transfer income in 1992. Our results suggest that family networks weakened somewhat after the economic transition.

I. Introduction

Can those in Eastern European families who are most severely impoverished during the transition from socialism to capitalism rely on private family safety nets for support? Consider, for example, the plight of a family whose primary earner has just been terminated from a discontinued state enterprise or a family farm rendered insolvent because of the cancellation of government subsidies. Do these families have more fortunate relatives or friends who can assist with cash, in-kind help, gifts or shared housing? Conversely, which are the households that cannot rely on such support?

These questions are critical for evaluating the likelihood of a successful economic transition in the Eastern bloc. On the one hand, an effective social safety net must be preserved--the rise in unemployment and widening of the distribution of income could derail popular support for a quick transition to capitalism (see, for example, Kornai (1990) and Lipton and Sachs (1990)). On the other hand, governments are facing fiscal constraints which render the previous regime's universal public transfer system unsustainable.

One answer is to target public transfers to the truly needy more effectively. In the words of Calvo and Frankel (1991), when "choosing among alternative safety nets, one should be aware that there is no way to protect all segments of society" (p. 42)¹. But reforming institutions to accomplish this is difficult and takes time. Are there other options? Fortunately, public transfers are not the only means of shuffling resources from one group to another. Family networks can also achieve substantial income redistribution, privately and with no apparent coercion.² Information about the size and flows of these private transfers would be extremely useful in determining the public funds needed to round out an adequate safety net. Private transfer information is also useful for identifying

¹Calvo, G. A. and Frankel, J. A., (1991), "From Centrally-Planned to Market Economies: The Road From CPE to PCPE." NBER Working Paper no. 3698, Cambridge, MA.

²Private income redistribution has been the topic of recent research in both developed countries (Cox (1987) and developing countries (Cox and Jimenez (1990)).

households who lack private safety nets. Targeting these families can be critical since the public sector may be their only source of insurance.

Despite the potential significance of family networks during Eastern Europe's transition, we currently know little about how these networks might function. In fact, we know little about even the basic facts, such as the incidence and magnitude of private transfers. Researchers are just beginning to explore household survey micro-data containing information about private transfers for Eastern European countries.

Part of the reason for this vacuum in policy discussions concerns availability of data. The principal objective of this paper is to **fill** this gap by analyzing the Household Budget Survey for Poland. Prior information suggests that private transfers are likely to figure prominently in the Polish system of safety nets and poverty alleviation. First, existing studies, conducted by both ourselves and others, indicate that private transfers are often large and responsive to economic and demographic variables.³ For example, private transfers flow **from** rich to poor, just as in public tax-and-transfer systems. And increases in household pre-transfer income often prompt reductions in private transfers, mirroring what happens in the public sector with means-tested social insurance programs. Further, private transfers are usually targeted to vulnerable groups such as the young, the elderly, female-headed households, and those stricken by **illness**, unemployment or income instability.

Another reason to believe that private safety nets are especially important in Poland has to do with the country's turbulent history. War, occupation and partitions are likely to have raised the value of family ties as coping mechanisms (Worach-Kardas (1983)). And there is emerging evidence that the formation of habits and traditions are important elements in family interaction, so that a history of hardship may have strengthened the cultural norms

³See Cox, Jimenez and Stark, Completion Report for RPO 676-46, "The Economics of Non-market Transfers in Developing Countries."

that facilitate private transfers. Poland's homogeneity of religious beliefs probably encouraged close family networks as well.

Indeed, the limited available evidence concerning private transfer and intergenerational relations in Poland points to strong ties between generations. For example, two-thirds of all elderly persons in Poland live with their children, which attests to the importance of private transfers in the form of shared living arrangements. And for all forms of care (e.g., caring for the sick, child care, help with errands and personal business) private familial sources are an order of magnitude more prevalent than professional sources (Worach-Kardas (1983)).

The need to understand the social and economic factors shaping private transfers--with special attention to their relationship to other forms of assistance--is justified by the increasing role of the private safety net for coping with economic hardship during the period of transition. A recent opinion survey (Rose (1992)) indicates that fully one-quarter of Polish households regard help from relatives and friends as important for their standard of living.⁴ According to a sociological survey conducted by GUS in January 1993, 28 percent received support from other households: in-kind (19 percent); cash (10 percent); ~~service/help~~ (7 percent); other forms (e.g., "life advice," 9 percent).⁵ The substantial duration of this assistance also matters: three-quarters of the recipient households have received at least one of these forms of assistance over a period of a year and a half. A similar proportion of households reported a significant impact on their well being from cash, non-cash or in-kind help from non-household family members. The major needs experienced by recipients--equivalently, the reasons that motivated donors--are associated with recipients' inability to cope with housing problems (21 percent could not afford to pay

⁴Asomewhat higher fraction of households indicate food among gifts and exchanges with other households --see Rose, R. (1992), "Poland: Results of a Survey of Economic and Political Behavior." University of Strathclyde, Glasgow, Scotland, CSPP • Studies in Public Policy, No. 201.

⁵GUS's note on "*Pomoc Społeczna w Świetle Badan GUS*," April, 1993. The authors would also like to acknowledge R. Walicki's helpful note ("*Pomoc Rodzinna*," April, 1993), prepared at their request.

rent), lack of a job or job uncertainty (18 percent), and food needs (18 percent). Further, the safety net provided by other institutions is far from comprehensive. According to the same study, an estimated one-third of households in Poland requiring financial support, and a fifth of households needing in-kind help, did not receive help from the state, church or charitable organizations. This finding highlights the importance of family networks for economic reform.

Further, Poland's chronic shortages prior to economic transition--felt most dramatically during the period of martial law (1981-84)--may have spurred the development of informal trading networks, which in turn strengthen the bonds needed to facilitate inter-household risk-sharing. Shortages likely encourage inter-household trade. If one household cannot obtain soap and another is short of meat, the two can improve their lot by trading. Trading experience could help forge the bonds of altruism and trust necessary for households to engage in risk-sharing behavior by making financial transfers.

In the next section we discuss the data. Then we describe the incidence and size of transfers and the characteristics of givers and recipients, from which we will infer whether private transfers tend to perform some of the functions of public transfers. This will be followed by a section that develops an empirical framework to address the critical policy question: to what extent do private transfers affect the incidence and effectiveness of publicly-funded safety nets?

II. Data Sources

The data used in the analysis come from the nationwide Household Budget Survey (HBS), conducted annually by Poland's Central Statistical Office (GUS) since 1957, and since 1982 under a substantially modernized methodology based on the quarterly rotation sampling design. Different households were surveyed in each quarter within the period of the year, using a diary as a collection instrument--i.e., a budget notebook, typically completed by a female homemaker or a person of similar status. Two-thirds of the

households were re-surveyed in the corresponding quarter over the period of four years (permanent part of the sample). The remaining third enter the study for just one quarter and are replaced in the following year.

The **HBS** is a multi-goal study, providing data on household income and expenditures for various population groups.⁶ More specifically, the survey delivers information on living conditions, measured by indicators such as income and expenditures, food consumption, durables, housing conditions and demographic conditions of households. The survey also provides basic information for the weights for the **cost-of-living** indices⁷ for major socio-economic groups. Analyses from the HBS have been used extensively for dealing with policy issues, such as determining the relationship between wages of particular groups of earners, and changes in pensions and annuities, family allowances and other social benefits. Cost-of-living increases have been defined on the basis of results from the HBS.

In 1987 HBS covered over 29,000 households (comprising about 90,000 persons), The Census enumeration regions (24,178 “area survey points,” divided into 98 strata for urban and rural areas in the 49 voievodship) were used as a frame for selecting the Primary Statistical Units (PSU’s) with probabilities proportional to size of the unit. Two sub-samples contained 450 PSU’s, and the **third** sub-sample only **168** in the rural areas. Each PSU **has** at least 250 dwellings. In the second stage, 150 dwellings (Ultimate Sampling Units, **USU's**) were selected in each PSU and were interviewed to gather information on sources of livelihood, number of persons in the household, education, monthly income, and farm acreage. This information was used to prepare the frame for selection of 6 households (4 for the permanent part and 2 for the changeable part) in each of the PSU’s.

⁶GUS, 1986, "*Metoda i Organizacja Badau Budzetow Gospodarstw Domowych*," (Method and Organization of the Study of the Household Budget), series *Zeszyty Metodyczne* (Methodological Papers) No. 62; Warsaw.

⁷Poland did not follow the recommendation by the 1947 conference of Labor Statisticians to compute a comprehensive ‘consumer price index,’ and instead two indices were used at the time: the ‘cost-of-living’ index and the index of retail prices of goods and services.

The households were stratified by source of income into four major socio-economic groups (the figures represent numbers of households included in GUS's calculations--GUS, 1988):⁸

<u>Socio-economic Groups</u>	<u>Number</u>	<u>Percentage</u>
Employee households whose major source of income comes from work in the socialized sector	13,647	46.9
Peasant/farmer households whose major source of livelihood is work on own agricultural holding	3,929	13.5
Farmer/worker households with income from both employment in socialized sector and own-account work on private agricultural holding	3,833	13.2
Pensioner households whose major source of income is old-age retirements or disability pensions or similar entitlements	7,681	26.4
Total	29,093	100.0

The advantages and limitations of the HBS for measuring the economic status of households, and for monitoring the impact of economic reform on the population, are discussed in a comparative perspective (with the *Hungarian Income Survey* and the *Czechoslovak Social Stratification Survey*) in Garner, Okrasa, Smeeding and Torrey (1991).⁹ The primary strength of the HBS is that it is designed to provide the most comprehensive and timely picture of a household's material status. Nevertheless, its pre-1992 versions (such as the 1987 HBS, used in this study) do have some drawbacks, the most important of which relate to coverage and to the non-response rate.

⁸GUS, 1988, *Rocznik Statystyczny*, Warsaw.

⁹Garner, T., Okrasa, W., Smeeding, T., and Torrey, B., 1991, "Household Surveys of Economic Status in Eastern Europe: An Evaluation," paper presented to the BLS/EUROSTAT Conference on Economic Statistics for Economies in Transition, Washington, DC, February 14-16, 1991.

The sample covers the non-institutional population of households whose heads belong to one of the above socio-economic groups. Excluded are households headed by someone employed in the private sector (5.6 percent of employees in 1986); persons employed in the defense and security ministries (3.1 percent before 1989); and **nomenclatura** (less than 1 percent and excluded by virtue of practice rather than principles). Altogether, 10.5 to 11.5 percent of the population were not covered by the **HBS** in 1987. There is also no information about income **from** outside the **legal/official** economy--that is, both the **alegal** (informal or social economy) and illegal (second or black economy) sectors of pro-income activities are missed. These activities were not as significant in 1987 as they were in later years. Rose's (1992) recent surveys indicate that, nowadays, every third household is engaged in some form of "uncivil **economy**."¹⁰

The non-response rate is rather high, and, according to experimental studies is caused by long (3 months per year) and detailed (diary) data **collection**.¹¹ In 1986, for example, 3 1.5 percent of **first-time** households selected refused to participate and 13.1 participating in the previous quarter refused to re-enter the study. Within each major socio-economic group refusals are replaced by households closest in size and per capita income. This method guarantees the required number of households for the survey and maintains proportions among important categories. On the other hand, refusals are non-random and the reliability of the procedure for replacing households depends on the care taken by the interviewer.

¹⁰Rose, R., 1992, "Monitoring Socio-economic Trends in Eastern Europe: A Survey-Based Approach," report to the World Bank (IECSE).

¹¹Kordos, J., and Kubiczek A., 1991, "Methodological Problems in the Household Budget Surveys in Poland," paper presented to the Workshop on Diary Surveys, Stockholm, February 18-20, 1991.

III. *Empirical Work*

We now turn to a description of private transfer magnitudes and patterns and results from a policy simulation. Because transfer behavior could vary a lot between socio-economic groups, and because of the income-measurement issues discussed above, we focus solely on households headed by a non-farm employee. Second, we concentrate on a logarithmic specification because it provides a better fit than the linear one explored in earlier drafts.

The results indicate that private transfers are an important component of income and expenditures in Poland. Among all households, gross receipts of private transfers account for 4 percent of total income in 1987 and, among recipients, net receipts comprise 9 percent of their income. Nearly two-thirds of the households in our sample are involved in **inter-household private transfers, either as donors, recipients, or both.**

Private transfers are responsive to the economic and demographic status of households. They flow from high to low-income households, and tend to go to the well-educated and households headed by a young couple. Transfers are also targeted to large families and those experiencing recent illness or injury. Transfers follow a pronounced age **pattern, which suggests that they might be responding to possible liquidity constraints** faced by households.

To gain some understanding of the potential role of private safety nets during Poland's economic transition (which began January 1, 1990), we simulated the impact of earnings loss on private transfers. We estimate the predicted boost in private transfers resulting **from setting the head's earnings to zero. Using the 1987 data, we found that, in** the face of these lost earnings, predicted receipts would more than double. This boost would **fill** 11 percent of the income void left by lost earnings of the household head. For single-earner households, the corresponding figure is larger--22 percent.

But there are several reasons to think that the post-transition impact could differ from that predicted from the 1987 results. The actual onset of unemployment could galvanize households and increase transfer activity. On the other hand, the specter of unemployment could weaken private networks if households become increasingly concerned with their own problems.

The HBS data set for 1992 helps to shed light on these issues. Though transfer incidence in 1992 was the **same** as in 1987, amounts received (adjusted for inflation) declined significantly. For example, the 1992 value of net transfer receipts, among recipients, was only two-thirds of what it was in 1987. And the replication of the **private-**transfer impact of earnings loss using the 1992 data show a much smaller response. Private transfer networks appear to have weakened after the transition.

1. Table I --Variable Means by Transfer Status

We restrict our analysis to households whose primary earner works in a state owned enterprise, and begin with an analysis of behavior prior to **the** transition by using the 1987 data. Table 1 contains selected characteristics of these households by transfer status. The income variables require some interpretation. One way to do this is to specify major income sources and their components, as in Diagram 1 below. Wages and salaries are considered the most reliable income data because figures are obtained from employers. Non-wage income tends to be under-estimated, especially the catch-all category, “other income.” We focus for now on non-farm, non-pensioner households because income measurement is more straightforward for them. We partition the sample into three **groups:** net recipients (those whose transfers received exceed transfers given), net givers (those whose transfers given exceed transfers received) and “others,” (those who are not involved in transfers).¹² We also include sample means for all non-farm households.

¹²A half a percent of those in the “others” category actually received transfers, but gave an equal amount. We count these households in the “other” category despite the fact that they are involved with transfers.

Private transfers include cash and in-kind transfers that flow between households. Cash gifts are reported directly in the income section of the questionnaire that summarizes, for the entire (quarterly) period of the study, information registered in the budget-notebook. Non-monetary gifts are first specified in expenditure/consumption sections of the same questionnaire and their values, estimated jointly by the interviewer and the household, are summed for the entire period of the study. Thus, gifts encompass both money and the value of goods and services obtained from friends and relatives not in the household, including bequests, marriage portion (dowry), the value of food and non-food consumer goods, and the value of goods brought from abroad by the household's members. This last item could cause some discrepancy between receipts and gifts. The questionnaire distinguishes between gifts given to households versus farms, but this is practically irrelevant for our sample of employee households. Total gifts equal money and the value of goods given to persons outside the household, including relatives separated from the **family for at least three months** (e.g., a child residing as a student in a dormitory.)

Private transfers are frequent and an important component of income for Polish households. The majority of Polish households (63 percent) are involved in **private-transfer** networks: as givers, recipients, or both (table 1). Forty-four percent were net recipients and 19 percent were net givers. Nearly 14.4 percent did both. For the entire **group** of non-farm employed households, gross private transfers received comprise 4.2 percent of income from all sources (including private transfers). Among net transfer recipients, net transfers account for 9 percent of total household income. Net gifts among givers amount to 3 percent of their total household income. To put the Polish figures in perspective, the volume of comparable transfers in the United States, as a fraction of income, is about the same as that of **Poland**.¹³

¹³The assumptions underlying these calculations are as follows: \$200 billion total transfers in the U.S. in 1988, and 2/3 of these are assumed inter-vivos transfers. Inter-vivos transfers as a proportion of aggregate disposable income in U.S. \$3,456.8 in 1988\$ are $.667(200)/3,456.8 = 3.9$ percent. Figures from Cox and Rank (1992) and the Economic Report of the President.

Private transfers flow from high- to low-income households. The pre-private: transfer income is lowest for net recipients and highest for net givers (table 1). Recipients have lower average social-transfer income than givers.

Those involved with private transfers are better educated than those who are not. Over 12 percent of net recipients and 13 percent of net givers attended a university, for example, compared to less than 10 percent of “others” (table 1). Recipients are younger, and givers older, than the sample average. Over 19 percent of recipient households were headed by someone under 30, compared to 10 percent of giver households. Further, the elderly (those aged 60 and over) are under-represented among recipients and **over-**represented among givers. (Though, in this sample of employees, they are a small minority overall.) Similarly, there are relatively fewer pensioners among recipients **compared to givers**. So it appears that transfers flow from old to young among these **non-**farm, employed households.

Evidence concerning the connection between transfers and household distress is mixed. Recipients had slightly more frequent **illness** or injury requiring hospitalization during the 3-month period of the survey, compared to the whole sample. But households **with invalids are under-represented among recipients.**¹⁴

The unconditional means in table 1 are only partially informative about transfer patterns. We now turn to a multivariate analysis of transfer incidence and amounts.

2. Specification of Transfer Functions

We estimate transfer functions in two stages: **first** we consider the incidence of **transfers (the transfer decision) and, conditional on a transfer occurring, the amount. In** each stage, the following household characteristics are included in the specification:

¹⁴**Recall** that this analysis focuses on the group of households headed by an employee. So our sample contains no households headed by pensioners or disabled people.

a. Household Resources

Household resources are measured by three forms of income: wages and salaries, social security income and income from social support. We also enter educational attainment of the head of the household as an indicator for household **permanent income**.

b. Age

We enter a quadratic in the age of the household head, as well as interacting age with income. If transfers are responsive to liquidity constraints, we would expect that timing of transfers would be important. Transfer incidence and amounts would be concentrated in life-cycle phases when current resources are low.

c. Demographic Characteristics

We enter a vector of other household demographic characteristics: gender of the household head, marital status, and family size. Many studies indicate that transfers are targeted to female-headed households (for a review of the evidence, see Cox and Jimenez, (1992)). Marital status has also been found to be an important determinant of transfers (Cox, 1987). And, holding household resources constant, we might expect more transfers to be targeted to larger families, since there would be more mouths to feed. We also include a dummy indicating whether there are pensioners present in the household, and one indicating whether there are elderly persons (aged 60 or over) but no pensioners. On the one hand, we might expect transfers to be targeted to the retired, though since this group is also collecting a pension, which could crowd out private transfers.

d. Other Variables

We include two health indicators in the transfer functions. The first is a dummy indicating whether a household member was injured or ill enough to require hospitalization during the 3 month period of the survey. The second dummy indicates whether one or more persons in the household were collecting a disability pension. If households form co-insurance networks we might expect transfers to respond positively to the incidence of

illness. We **also enter** dummy variables for whether the household has a telephone and a car. If having either of these enables a household to perform more inter-household, in-kind services or have increased contact with relatives and friends we would expect them to be positively associated with private transfers.

3. *Table 2--Probit Results for Net Transfer Receipts*

Probit results for net transfer receipts are presented in table 2, column 1. With the **exception of a couple of findings, transfers appear to be targeted to low-income, vulnerable** households such as those headed by the young, those experiencing recent illness or households with a lot of children.

Household resources, measured by wage and salary income and social security income, are each inversely related to the probability of transfer receipt. Income measures are entered in logarithms, so that their impact is larger at low income levels. Increasing income from 20,000 to 30,000 zlotys reduces the probability of transfer receipt by about 8.4 percentage points. But the same increase in income at sample means (43,180 zlotys) would reduce the probability of transfer receipt by 4 percentage points. An increase in social security income from 0 to the sample mean reduces the probability of transfer receipt by 10 percentage points. (See chart 1 for an illustration of the connection between **pre-transfer** income and the probability of transfer receipt.)

On the other hand social support appears to complement private transfers. Increasing social support from 0 to its mean value raises the probability of private transfer receipt by 8 percentage points. Private transfers follow a pronounced age pattern over the **life-cycle, suggesting that they may be responsive to possible liquidity constraints faced by** households. At sample means, a household headed by an 18 year-old has a (predicted) 51 percent probability of receiving a transfer. The transfer receipt probability falls continuously with age, falling to about 19 percent by age 73 (chart 2).

Households having a member who was hospitalized are more likely to receive a transfer--having illness or injury raises the probability of transfer receipt by 3.3 percentage points. Similarly, households with someone classified as an “invalid” (i.e., a person who **qualifies for disability benefits**) is **6.1 percentage points more likely to receive a transfer**.

All else equal, households headed by women are 1.3 percentage points less likely to receive (but the coefficient is not statistically significant), and young couples are 10.9 percentage points more likely to receive. But being married reduces the probability of transfer receipt by 4.5 percentage points. Larger families are more likely to receive. All else equal a family of 7 is 1.4 percentage points more likely to receive a transfer than a family of 2.

Households with a pension beneficiary are less likely to receive transfers (7 percentage points).

While this evidence suggests that private transfers compensate for low incomes and other **difficult** situations, other findings from column 1, table 2 point to the contrary. **Well-educated households, for example, are more likely to receive than those having just an** elementary school education (high school: + 4.0 percentage points, university: + 8.6 percentage points). The education effect may be due to liquidity constraints (Cox, 1990). Being better educated raises permanent income and hence desired consumption. With current income constant, the gap between desired consumption and current income rises. If **liquidity constraints are binding, private transfers might be an alternative to financial** markets as a source of credit.

Having a phone or car also raises the probability of receiving (phone: + 4.3 percentage points, car: + 5.4 percentage points). Having a car or phone may indicate the ability of households to provide inter-household services and contact, increasing their chances of receiving a transfer. On the other hand, the causality in the regressions could go the other way, with transfers enabling the purchase of these items.

4. Generalized Tobit--Transfer Recipients

The generalized **Tobit** for transfer recipients is presented in the second column of table 2. Again, transfers and income are measured in logarithms. The sign pattern for the generalized **Tobit** is roughly consistent with that of the **probit**.¹⁵

Wage and salary income (i.e., earnings) is inversely related to amounts received, though the point estimates indicate that the impact is small. At sample means, the elasticity of transfers with respect to earnings is -0.388. The partial effect of an increase in earnings on transfer amounts, at sample means, is about -0.045 zlotys per 1 zloty increase in earnings.¹⁶ The impact of earnings on transfers is much larger in absolute value at lower earnings levels (chart 3).

Transfers fall with age, especially for poorer households, which is consistent with the liquidity constraints hypothesis, which predicts that transfers follow a distinct life-cycle pattern for those who have difficulty borrowing (chart 4). For example, with other variables at sample means, having pre-transfer income of 10,000 implies that transfer amounts fall by 1.6 percent per year. But a household with a 90,000 zloty income has a predicted age-transfer **profile** that is almost flat.

The two demographic indicators--marital **status** and the young couple dummy--have large effects on transfer amounts. Young couples receive 33 percent more, and other married couples 28 percent less, than households headed by single people. Family size and number of children affect transfer amounts as well. Increasing the family size by one person raises transfers by 6.5 percent. An extra child under 18 boosts transfer amounts by 4.4 percent.

¹⁵The **probit** equation used to generate the inverse Mills ratio terms for the generalized **Tobits** for receiving (Table 2) and giving (Table 3) uses a step, rather than a quadratic, function for age: **age**<30, **age**≥60, and 10-year intervals in-between. The difference in the way age enters the incidence versus amount equations is used to identify the generalized **Tobit**. These **probit** equations produce estimated partial derivatives similar to their counterparts in Tables 2 and 3.

¹⁶Details of calculation: $[-0.8888 + 0.0038(\text{Average age})] \text{ times } [\text{average transfer/average income} = .2] = -0.15$.

Consistent with the **probit** results, social security and social support exert opposing effects on amounts, though neither elasticity is large.

5. Giving Behavior

The **probit** and generalized **Tobit** estimates for transfers given are shown in table 3. The **probit** estimates indicate that increasing earnings from 40,000 zlotys to 70,000 zlotys increases the probability of giving a transfer by 11 percentage points. An increase in social security income from 0 to the sample mean increases the probability of giving by 6.0 percentage points. Again, the logarithmic specification implies that the partial impact of earnings on the probability of giving diminishes as the level of earnings rises.

Social support income have negligible effects on giving behavior (table 3, columns 1 and 2). The partial effect of earnings on the probability of giving declines with age, though its effect is not statistically significant.

The probability of giving also increases with education. Those who have attended high school, “occupational” school, or university each have a higher probability of giving than the reference category, those with an elementary school education or less. For **example**, all else equal, attending university instead of just elementary school adds 5.2 percentage points to the predicted probability of giving a transfer.

The probability of giving follows a pronounced age pattern. At sample means, the predicted probability of giving continually rises **from** 16 percent at age 18 to 37 percent at age 70. Part of the age pattern could reflect sensitivity of giving with respect to current resources: givers might be liquidity constrained and only able to give when their current resources are high. On the other hand, giving should also be driven by the number of dependents living outside of the household, which would vary with age of the household head.

Demographic patterns for the probability of giving tend to mirror those for receiving. For example, young couples are 4.1 percentage points less likely to give.

Family size exerts a strong negative effect on the probability of giving. With the rest of the variables at sample means, a household with two members has a predicted probability of giving of 32 percent. One with 7 members has a predicted probability of only 10 percent.

6. A Simulation of the *Effects* of Job Loss on Transfers

This section addresses the following question: If the household head had a reduction in earnings, how would private transfers respond? The question is important because we would like to gauge the extent and magnitude of private safety nets available for households who lose their jobs as Poland makes **the** transition from a socialist to Capitalist economy. The stronger the private safety nets, the lesser the scope for effective redistribution through public income transfers. At **the** same time, extrapolating from the 1987 cross-section could be problematic because the transfer function need not be stable throughout the transition. For this reason, we examine post-transition transfer behavior in the next section.

We **find** that, on average, predicted private transfer receipts would increase by 133 percent if the household head lost his/her earnings. The boost in private transfers would fill about 18 percent of the income vacuum left by the job loss, though the effect varies a lot depending on whether there is only one earner in the household. So private transfers, while not availing households of complete insurance against job loss, fill a substantial portion of the income gap caused by such losses.

The rest of this section provides the details of our calculations.

We calculated the predicted probability of transfer receipt and transfer amount after setting the earnings of the household head equal to zero. So earnings of the **first** earner are subtracted from the pre-transfer income in the simulation.¹⁷

¹⁷Those households for whom earnings were greater than pre-transfer income (1.7 percent of the sample) and those for whom earnings of the **first earner** are the sole source of support for the household were deleted from these simulations. The total deletion: 3.1 percent of the sample. The reason for deleting those who relied solely on earnings for support—in log specification the predictions become extreme at very low values of pre-transfer income.

The results from the simulation are outlined below:

<u>Household</u> <u>Tvne</u>	All	1 Worker	>1 Worker
Actual net transfers	2,160	2,669.0	1,722.0
Actual proportion receiving transfers	0.445	0.497	0.400
Head's earnings	26,290	25,260	27,170
Predicted change in probability of transfer receipt after removing head's earnings	+0.222	+0.308	+0.148
Predicted change in transfers after removing head's earnings	2,869.0	5,552.0	553.1
Percentage of lost earnings replaced by change in transfers	10.9%	22.0%	2.0%

Earnings replacement for single-worker households is higher because the log specification implies that the transfer effects of earnings are greater in absolute value the lower are **earnings**.¹⁸

The simulation results are displayed in chart 5. The boost in private transfers prompted by the earnings loss of the head of the household makes up for nearly 11 percent of lost income for the sample as a whole. For households with only one worker, this figure is 22 percent. So private transfers can replace a significant fraction of income in the event that an earner loses his or her job. The simulation shows that private safety nets were potentially important in Poland prior to the transition.

There are three **final** ideas to keep in mind concerning the simulation. First, it is a partial equilibrium exercise. We assume that one household experiences joblessness but the others do not. Since earnings loss is not widespread other households do not lose their capacity to give transfers. If a significant fraction of households lost their earnings at once, private safety nets could dry up rather than expand. In fact, if Poland is to rely on private

¹⁸Let the income coefficient in the log-transfers be denoted by "a." $\partial T / \partial I = a \cdot T / I$. The partial effect increases the smaller is I.

safety nets during the economic transition, a gradualist transition policy would be preferred to “shock therapy.”¹⁹

Second, the HBS does not link donors and recipients. Since donor incomes cannot be included in the regressions for private transfer receipts, coefficient estimates of the recipient income variables could be biased toward zero. Omitted variable bias renders our simulations conservative. The reason is that donor’s income is likely to enter positively in the transfer regressions, and we would expect that incomes of donors and recipients are positively correlated. Taking into account the possibility that our results could be affected by omitted variable bias strengthens our conclusions that private transfers are a potentially important safety net in Poland.

Third, we must examine transfer behavior during the post-transition regime to get **an accurate picture of the stability of the transfer functions** through the **transition**. We turn our attention to a replication of the analyses above using the HBS data for 1992.

IV. Results from the 1991 Survey

We replicated the 1987 results using the 1992 HBS. The replication of table 1 for **the 1992 data is presented in table 4** **The incidence of transfers** is roughly **the same as in** 1987, but amounts are much smaller. This is the most striking difference between the 1987 and 1992 results. For example, the average gross transfers received in the 1992 sample was 29 percent lower than that in 1987 (Zloty amounts are adjusted for inflation).²⁰ But transfers given held steady between the two years, suggesting that one source of the **shortfall in receipts could stem from a reduction in transfers received from outside** Poland.²¹

¹⁹Of course, there are other reasons, outside the realm of family safety nets, for favoring “shock therapy” (see for example Lipton and Sachs (1990))

²⁰The HBS sample was drastically reduced starting in 1992, which accounts for the sample size of 4,210 in 1992, down from 12,896 in 1987.

²¹Unfortunately, our transfer data are aggregated across **catagories** so we cannot ascertain the exact source of the reduction in transfers received.

The **probit** equation for net transfers received is remarkably stable across the two sample years (column 1, table 2 versus column 1, table 5 for 1992). A test for structural change generated a Chi-squared test statistic of 17.7, which is not significant at even the .25 level. Further, not a single coefficient estimate from the 1992 probit for transfer receipt was significantly different from its counterpart in the 1987 sample. The largest difference in the point estimates is associated with the variable for the presence of an “invalid,” which is positively and significantly associated with receiving a transfer in 1987 but not 1992.

The generalized **Tobit** results for net transfers received in 1992 are presented in the second column of table 5. Like the **probit** results, the generalized **Tobits** are stable across the two years, in the sense that, except for the differences in constant terms for the two equations, the differences in the estimated coefficients are not jointly significant. The most striking difference between the estimates is that pre-transfer income is significantly inversely related to transfer amounts in 1987 but not in 1992. The 1992 elasticity of transfers with respect to pre-transfer income (at sample means) is about half as large as in 1987 (1987: -0.388, 1992: -0.210).

Because transfer receipts fell in 1992 and the responsiveness of transfers to pre-transfer income weakened as well, our simulation of the impact of job loss on transfer receipts generated a much weaker impact than the simulation with the 1987 data. We found that private transfers would only fill 2.5 percent of the gap left by removing the earnings of the head (compared to 11 percent for the 1987 data). And for single-earner households, the comparable figure in 1992 is 3.6 percent (versus 22 percent in 1987).

The **probit** and generalized **Tobit** equations for transfers given in 1992 are presented in table 6. The **probit** results (column 1) follow the same pattern with respect to pre-transfer income as the 1987 results. But the impact of education on the probability of giving a transfer was negative in 1992 and positive in 1987. For example, having a

university degree increased the probability of giving a transfer by 8 percentage points in 1987, but reduced the probability of giving by 9.7 percentage points in 1992.

As with transfers received, transfers given became less responsive to pre-transfer income in 1992. The elasticity of amounts given with respect to pre-transfer income (at sample means) was less than half as large in 1992 as in 1987 (0.70 versus 1.59).

V. *Conclusion*

Private transfers are -responsive to the economic status of households in a way that suggests they may be an important factor in Poland's economic transition. Our simulation with 1987 data of the response of private transfers to loss of earnings of the household head indicates that a substantial fraction of lost income could be replaced by a boost in private transfers. But there are reasons to believe that the transition could cause family networks to weaken, and in fact private transfer amounts were much lower in 1992 than in 1987. Aside from the change in the level of transfers, however, the transfer functions for the two years appear quite stable. The primary difference is that transfer amounts (both receipts and gifts) appear less responsive to pre-transfer income in 1992 compared to 1987. The viability of family networks likely depends in part on the pace of transition. With imperfect capital markets, a more gradual transition is likely to facilitate the workings of inter-household transfer networks.

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Table 1
Selected Characteristics of Polish Households by Private Transfer Status, 1987

	[1]	[2]	[3]	[4]
<u>Variable Name</u>	<u>411 Households</u>	<u>Net Recipients</u>	<u>Net Donors</u>	<u>Others</u>
<u>Income Variable</u>				
Income before private transfers	51,840	48,220	57,090	53,530
Income before social&private transfers	45,950	42,570	51,040	47,410
Wage, salary and allowances	43,180	40,640	47,470	44,060
Total household income	53,650	53,020	55,400	53,530
Income from social transfers	5,896	5,644	6,048	6,121
Receives social transfers	0.920	0.945	0.888	0.907
Income from social security	2,762	1,932	3,569	3,347
Receives social security	0.233	0.173	0.283	0.280
First earner's wages	26,260	25,110	29,090	26,200
Wage and salary income of other workers	11,080	9,240	13,280	12,130
<u>Education</u>				
Elementary school	0.223	0.195	0.204	0.266
High school	0.297	0.311	0.315	0.272
Occupational type school	0.365	0.369	0.346	0.369
University	0.112	0.120	0.133	0.091
<u>Other Characteristics</u>				
Age of household head	39.410	37.000	42.270	40.860
Age less than 30	0.149	0.193	0.100	0.122
Age greater than 60	0.010	0.006	0.018	0.012
Married household	0.947	0.929	0.970	0.956
Young couple	0.186	0.272	0.110	0.121
Female headed household	0.285	0.277	0.283	0.295
Pensioner in the hh	0.133	0.093	0.164	0.165
Household with old non-pensioners	0.032	0.019	0.042	0.044
Invalid in the hh	0.046	0.040	0.044	0.055
Ill last 3 months	0.076	0.079	0.083	0.067
Phone in hh	0.197	0.195	0.232	0.181
Car in hh	0.293	0.306	0.335	0.258
Family size	3.633	3.757	3.341	3.633
Number of wage earner's in hh	1.584	1.503	1.662	1.642
<u>Transfers</u>				
Proportion receiving net transfers	0.443	1.000	0.000	0.000
Net transfer received (amount)	2,124	4,798	0	0
Proportion giving net transfers	0.187	0.000	1.000	0.000
Net transfer given (amount)	315	0	1,683	0
Proportion receiving gross transfers	0.490	1.000	0.246	0.002
Gross transfers received (amount)	2,259	5,006	222.3	2.898
Proportion giving gross transfers	0.286	0.222	1.000	0.002
Gross transfers given (amount)	449	208	1,905	2.898
Sample Size	12896	5710	2410	4776

Note: Zloty denominated variables are in 1986 zlotys

Table 2
Probit and Generalized Tobit Estimates -- Net Transfers Received, 1987

<u>Variable Name</u>	<u>[1]</u> <u>Probit</u>			<u>[2]</u> <u>Tobit</u>		
	<u>Coefficient</u>	<u>T-Ratio</u>	<u>Variable Mean</u>	<u>Coefficient</u>	<u>Variable mean</u>	<u>Variable mean</u>
<u>Income Variables</u>						
Log Pre-transfer Income	-0.6388	-5.5860	10.5855	-0.6956	-3.1860	10.5279
Log Income from Social Security	-0.0329	-6.4080	2.1591	-0.0407	-2.5220	1.5900
Log Income from Social Transfers	0.0261	4.0780	7.6371	0.0451	2.8590	7.8302
Log Income*Head's Age	0.0030	1.0610	417.5300	0.0078	1.5390	389.9248
<u>Education Variables</u>						
High School	0.0958	2.7740	0.2971	0.2041	2.9740	0.3105
Occupational Type School	-0.0320	-0.9830	0.3648	0.0811	1.4910	0.3694
University	0.2092	4.5020	0.1120	0.4355	3.8890	0.1203
<u>Other Characteristics</u>						
Head's Age	-0.0547	-1.7370	39.4123	-0.0813	-1.5400	36.9977
Age squared	0.0001	0.4940	1642.6795	-0.0002	-0.8820	1441.0730
Married household	-0.1193	-1.9970	0.9466	-0.3269	-3.3210	0.9287
Young Couple	0.2843	7.4600	0.1858	0.2848	2.6650	0.2715
Female headed household	-0.0337	-1.1040	0.2850	-0.0587	-1.1010	0.2771
Pensioner in household	-0.1951	-3.4860	0.1331	-0.2726	-2.0240	0.0932
HH with old non-pensioners	-0.0808	-1.0770	0.0325	-0.1512	-0.9800	0.0187
Invalid in household	0.1610	2.3420	0.0463	0.3391	2.3140	0.0401
Ill last 3 months	0.0875	2.0130	0.0756	0.0714	0.9400	0.0793
Household has phone	0.1138	3.5490	0.1969	0.0859	1.2640	0.1954
Household has car	0.1428	5.1970	0.2933	0.2247	3.2860	0.3056
Family size	0.0074	0.3970	3.6334	0.0627	1.9130	3.7571
HH with children less than 18	0.1323	6.2480	1.3362	0.0430	0.6930	1.5713
Constant	7.0483	5.8380	—	14.3150	6.7900	—
Inverse Mill's Ratio	—	—	—	0.3474	0.5780	0.8104
Number of observations	12896			5710		
Dependent Variable mean	0.4427			7.5682		
Log-Likelihood	-8109.9		R-squared	0.062		
Chi-Squared	1488.5		F-statistic	17.850		

Note: Zloty denominated variables are in 1986 zlotys

Table 3
Probit and Generalized **Tobit** Estimates -- Net Transfers Given, 1987

<u>Variable Name</u>	<u>[1]</u> <u>Probit</u>			<u>[2]</u> <u>Tobit</u>		
	<u>Coefficient</u>	<u>T-Ratio</u>	<u>Variable Mean</u>	<u>Coefficient</u>	<u>T-Ratio</u>	<u>Variable mean</u>
Income Variables						
Log Pre-transfer Income	0.7167	5.3600	10.5855	1.9247	2.5620	10.6836
Log Income from Social Security	0.0275	4.8160	2.1591	0.0581	1.6480	2.6448
Log Income from Social Transfers	-0.0032	-0.4640	7.6371	-0.0192	-1.1680	7.3469
Log Income*Head's Age	-0.0030	-0.9620	417.5300	-0.0080	-1.2660	451.5747
Education Variables						
High School	0.1155	2.9130	0.2971	0.0917	0.5650	0.3149
Occupational Type School	0.1274	3.3540	0.3648	0.2041	1.1720	0.3461
University	0.0851	1.6170	0.1120	0.0279	0.1790	0.1332
Other Charecteristics						
Head's Age	0.0410	1.1450	39.4123	0.1043	1.3150	42.2726
Age squared	0.0000	0.2670	1642.6795	0.0000	-0.0490	1,884.0452
Married household	0.1644	2.1510	0.9466	0.1744	0.6010	0.9701
Young Couple	-0.1393	-2.9400	0.1858	-0.2910	-1.5090	0 . 1 1 0 4
Female headed household	-0.0006	-0.0190	0.2850	-0.0289	-0.3470	0.2834
Pensioner in household	0.0797	1.3620	0.1331	0.1876	1.1130	0.1639
HH with old non-pensioners	-0.0713	-0.9090	0.0325	0.0302	0.1620	0.0423
Invalid in household	-0.1741	-2.2940	0.0463	-0.0826	-0.2980	0.0440
Ill last 3 months	0.0833	1.7020	0.0756	0.2107	1.3950	0.0834
Household has phone	-0.0522	-1.4500	0.1969	0.0014	0.0130	0.2320
Household has car	0.0049	0.1560	0.2933	-0.0011	-0.0140	0.3349
Family size	-0.1650	-7.7110	3.6334	-0.3465	-1.7320	3.3407
HH with children less than 18	-0.0053	-0.2140	1.3362	-0.0690	-1.1100	1.0000
Constant	-8.5955	-6.0380		-16.1900	-1.5440	
Inverse Mill's Ratio	---	---	---	1.8649	1.2460	1.3524
Number of observations	12896			2410		
Dependent Variable mean	0.1869			6.710		
Log-Likelihood	-5849.5		R-squared	0.059		
Chi-Squared	724.1		F-statistic	7.188		

Note: Zloty denominated variables are in 1986 zlotys

Table 4
Selected Characteristics of Polish Households by Private Transfer Status, 1992

	[1]	[2]	[3]	[4]
<u>Variable Name</u>	<u>All Households</u>	<u>Net Recap-</u>	<u>Net Donors</u>	<u>Others</u>
<u>Income Variables</u>				
Income before private transfers	49,122	46,054	56,560	49,598
Income before social&private transfers	42,518	39,585	49,369	43,096
Wage, salary and allowances	39,509	37,350	44,957	39,730
Total household income	50,321	49,190	54,894	49,598
Income from social transfers	6,604	6,462	7,188	6,506
Receives social transfers	0.918	0.939	0.909	0.895
Income from social security	3,012	2,237	4,411	3,368
Receives social security	0.269	0.217	0.343	0.302
First earner's wages	22,814	21,582	26,504	22,644
Wage and salary income of other workers	9.010	7.926	11.025	9.469
<u>Education</u>				
Elementary school	0.141	0.126	0.137	0.165
High school	0.337	0.347	0.353	0.315
Occupational type school	0.362	0.366	0.318	0.380
University	0.137	0.138	0.161	0.124
Post high school, not university	0.023	0.025	0.031	0.017
<u>Other Characteristics</u>				
Age of household head	40.300	38.550	43.130	41.260
Age less than 30	0.117	0.135	0.083	0.109
Age greater than 60	0.008	0.004	0.022	0.007
Married household	0.949	0.934	0.963	0.961
Young couple	0.135	0.189	0.064	0.099
Female headed household	0.395	0.400	0.387	0.392
Pensioner in the hh	0.137	0.097	0.215	0.153
Household with old non-pensioners	0.016	0.008	0.036	0.018
Invalid in the hh	0.040	0.032	0.055	0.044
Ill last 3 months	0.066	0.069	0.060	0.065
Phone in hh	0.309	0.297	0.350	0.306
Car in hh	0.412	0.418	0.454	0.384
Family size	3.584	3.703	3.327	3.551
Number of wage earner's in hh	1.405	1.361	1.467	1.432
<u>Transfers</u>				
Proportion receiving net transfers	0.475	1.000	0.000	0.000
Net transfer received (amount)	1,491'	3,139	0	0
Proportion giving net transfers	0.174	0.000	1.000	0.000
Net transfer given (amount)	290	0	1,666	0
Proportion receiving gross transfers	0.525	1.000	0.281	0.002
Gross transfers received (amount)	1,607	3,301	221	2
Proportion giving gross transfers	0.278	0.218	1.000	0.002
Gross transfers given (amount)	406	162	1888	2
Sample Size	4210	2000	732	1478

Note: Zloty denominated variables are in 1986 zlotys

Table 5
Probit and Generalized Tobit Estimates -- Net Transfers Received, 1992

<u>Variable Name</u>	<u>[1]</u> <u>Probit</u>			<u>[2]</u> <u>Tobit</u>		
	<u>Coefficient</u>	<u>T-Ratio</u>	<u>Variable Mean</u>	<u>Coefficient</u>	<u>T-Ratio</u>	<u>Variable mean</u>
<u>Income Variables</u>						
Log Pre-transfer Income	-0.7058	-3.4220	10.4788	-0.2861	-0.8320	10.4232
Log Income from Social Security	-0.0229	-2.8840	2.4707	-0.0209	-1.2680	1.9741
Log Income from Social Transfers	0.0309	2.8240	7.8233	0.0343	1.4900	8.0004
Log Income*Head's Age	0.0062	1.2660	422.5487	0.0019	0.2320	402.0618
<u>Education Variables</u>						
High School	0.1479	2.3420	0.3366	0.2119	1.7890	0.3470
Occupational Type School	0.0175	0.2860	0.3622	0.0420	0.4390	0.3655
University	0.2443	3.0540	0.1368	0.3614	2.1520	0.1375
<u>Other Charecteristics</u>						
Head's Age	-0.0570	-1.0520	40.2960	0.0017	0.0190	38.5460
Age squared	-0.0003	-0.9550	1,700.2708	-0.0004	-0.9230	1,551.6620
Married household	-0.1813	-1.7660	0.9487	-0.3334	-2.0340	0.9340
Young Couple	0.2957	3.9700	0.1354	0.3515	2.3130	0.1885
Female headed household	0.0378	0.8220	0.3948	-0.0059	-0.0810	0.3995
Pensioner in household	-0.2004	-2.2670	0.1368	-0.2645	-1.4380	0.0965
HH with old non-pensioners	-0.1432	-0.7670	0.0162	0.6083	1.5910	0.0075
Invalid in household	-0.0352	-0.2830	0.0401	0.2357	1.0960	0.0320
III last 3 months	0.0514	0.6360	0.0658	0.2452	2.0150	0.0685
Household has phone	0.0381	0.7960	0.3093	0.1100	1.4690	0.3970
Household has car	0.1307	2.9500	0.4121	0.0249	0.2830	0.4175
Family size	-0.0046	-0.1470	3.5841	0.0193	0.3800	3.7025
HH with children less than 18	0.1257	3.4940	1.2810	0.1528	1.9800	1.4805
Constant	7.0963	3.2840	--	9.4275	2.7520	--
Inverse Mill's Ratio	--	--	--	0.1854	0.2580	0.7782
Number of observations	4210			2000		
Dependent Variable mean	0.4751			7.2660		
Log-Likelihood	-2724.1		R-squared	0.066		
Chi-Squared	377.5		F-statistic	6.617		

Note: Zloty denominated variables are in 1986 zlotys

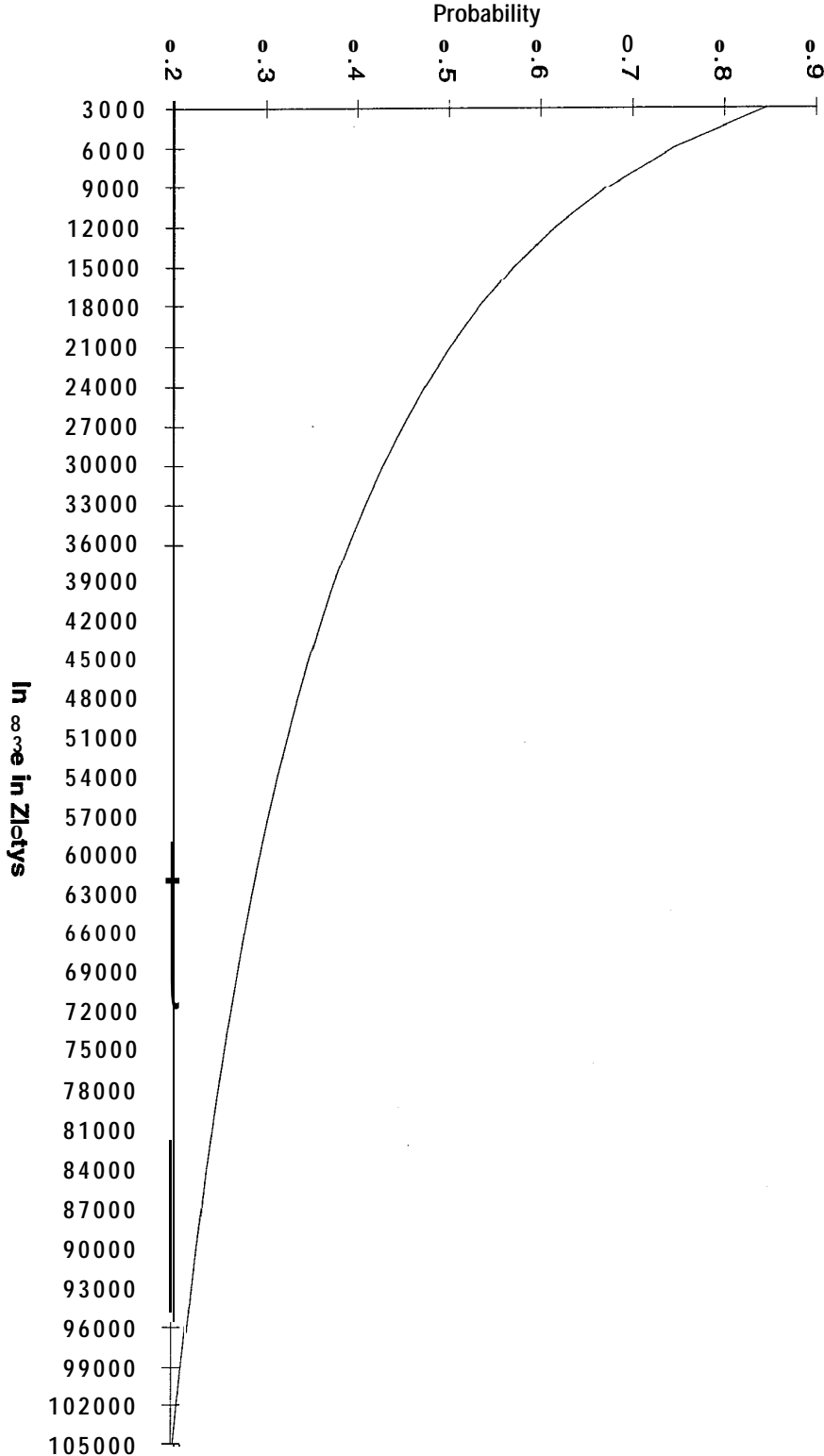
Table 6
Probit and Generalized **Tobit** Estimates -- Net Transfers Given, 1992

Name	[1] Probit			[2] Tobit		
	Coefficient	T-Ratio	Variable Mean	Coefficient	T-Ratio	Variable mean
<u>Income Variables</u>						
Log Pre-transfer Income	0.8456	3.3540	10.4788	0.4245	0.6530	10.6108
Log Income from Social Security	0.0100	1.0510	2.4707	0.0108	0.5060	3.2065
Log Income from Social Transfers	0.0160	1.2790	7.8233	-0.0061	-0.2270	7.7418
Log Income*Head's Age	-0.0059	-1.0300	422.5487	0.0064	0.5360	457.6540
<u>Education Variables</u>						
High School	-0.0517	-0.7000	0.3366	0.1713	1.1240	0.3525
Occupational Type School	-0.0469	-0.6450	0.3622	0.0452	0.2980	0.3183
University	-0.1280	-1.3840	0.1368	-0.0282	-0.1390	0.1612
<u>Other Charecteristics</u>						
Heads Age	0.0846	1.3100	40.2960	-0.1774	-1.3420	43.1298
Age squared	-0.0001	-0.4330	1,700.2708	0.0014	2.2950	1,940.2992
Married household	0.1385	1.0730	0.9487	-0.0651	-0.2150	0.9631
Young Couple	-0.2412	-2.4150	0.1354	-0.3982	-1.3530	0.0642
Female headed household	-0.0302	-0.5560	0.3948	-0.0954	-0.8330	0.3866
Pensioner in household	0.2744	2.8250	0.1368	0.0720	0.2870	0.2145
HH with old non-pensioners	0.2076	1.1490	0.0162	-0.2585	-0.7700	0.0355
Invalid in household	0.0112	0.0840	0.0401	-0.0544	-0.2170	0.0546
Ill last 3 months	-0.0684	-0.6930	0.0658	-0.0306	-0.1470	0.0601
Household has phone	-0.0716	-1.2780	0.3093	-0.0505	-0.4090	0.3497
Household has car	-0.0338	-0.6470	0.4121	-0.0970	-0.8950	0.4536
Family size	-0.1451	-3.8860	3.5841	-0.1397	-1.1420	3.3265
HH with children less than 18	-0.0253	-0.5870	1.2810	0.0499	0.5470	0.9699
Constant	-10.1740	-3.8190	--	4.8040	0.6230	--
Inverse Mill's Ratio	--	--	--	-0.0806	-0.0990	1.3762
Number of observations	4210			732		
Dependent Variable mean	0.1739			6.685		
Log-Likelihood	-1817.8		R-squared	0.081		
Chi-Squared	254.3		F-statistic	2.996		

Note: Zloty denominated variables are in 1986 zlotys

Chart 1

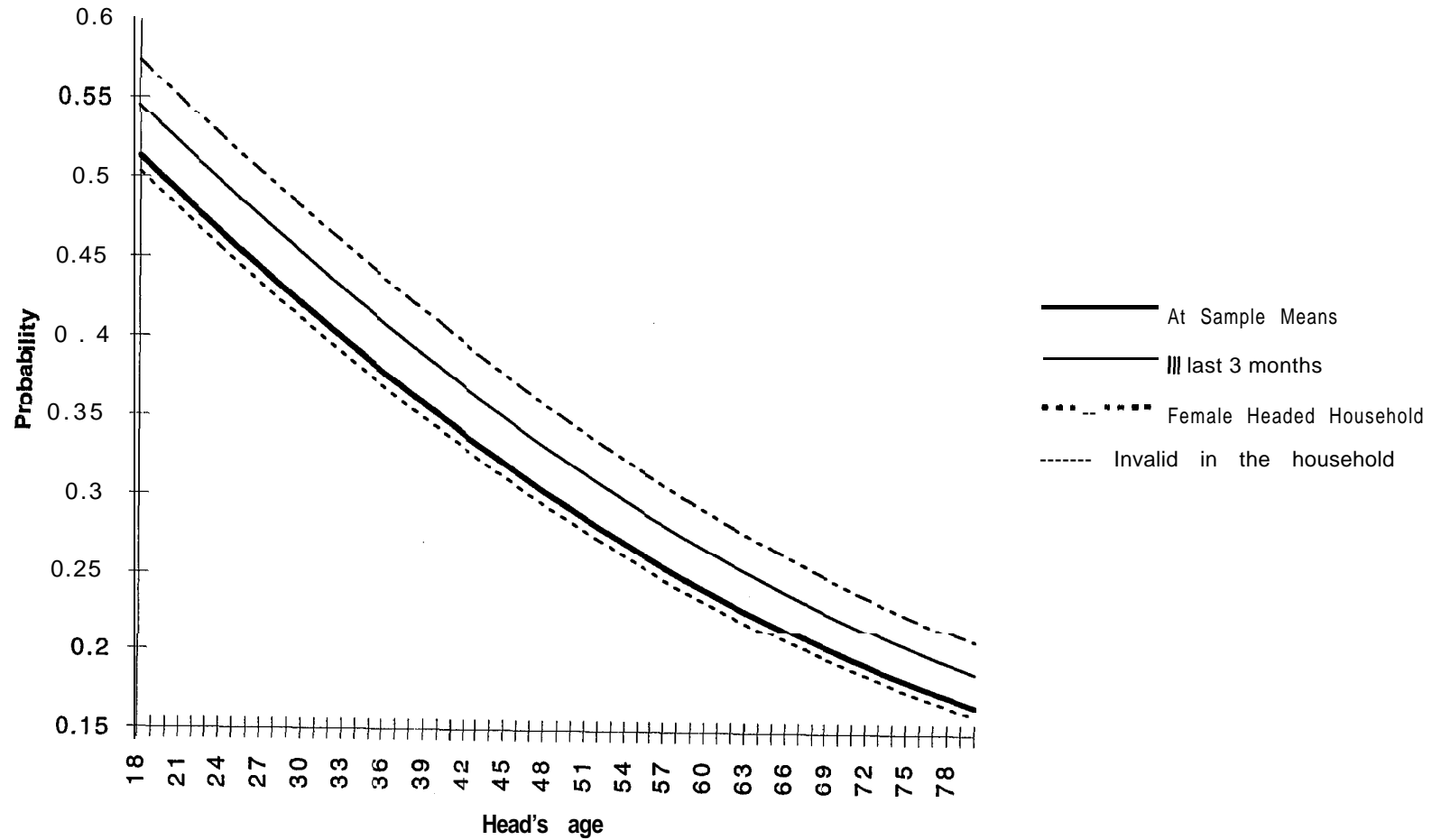
Probability of Net transfer Receipt as a Function of Pre-Transfer Income, 1987



Source: Net Transfer Receipt Probit. Table 2, Column 1

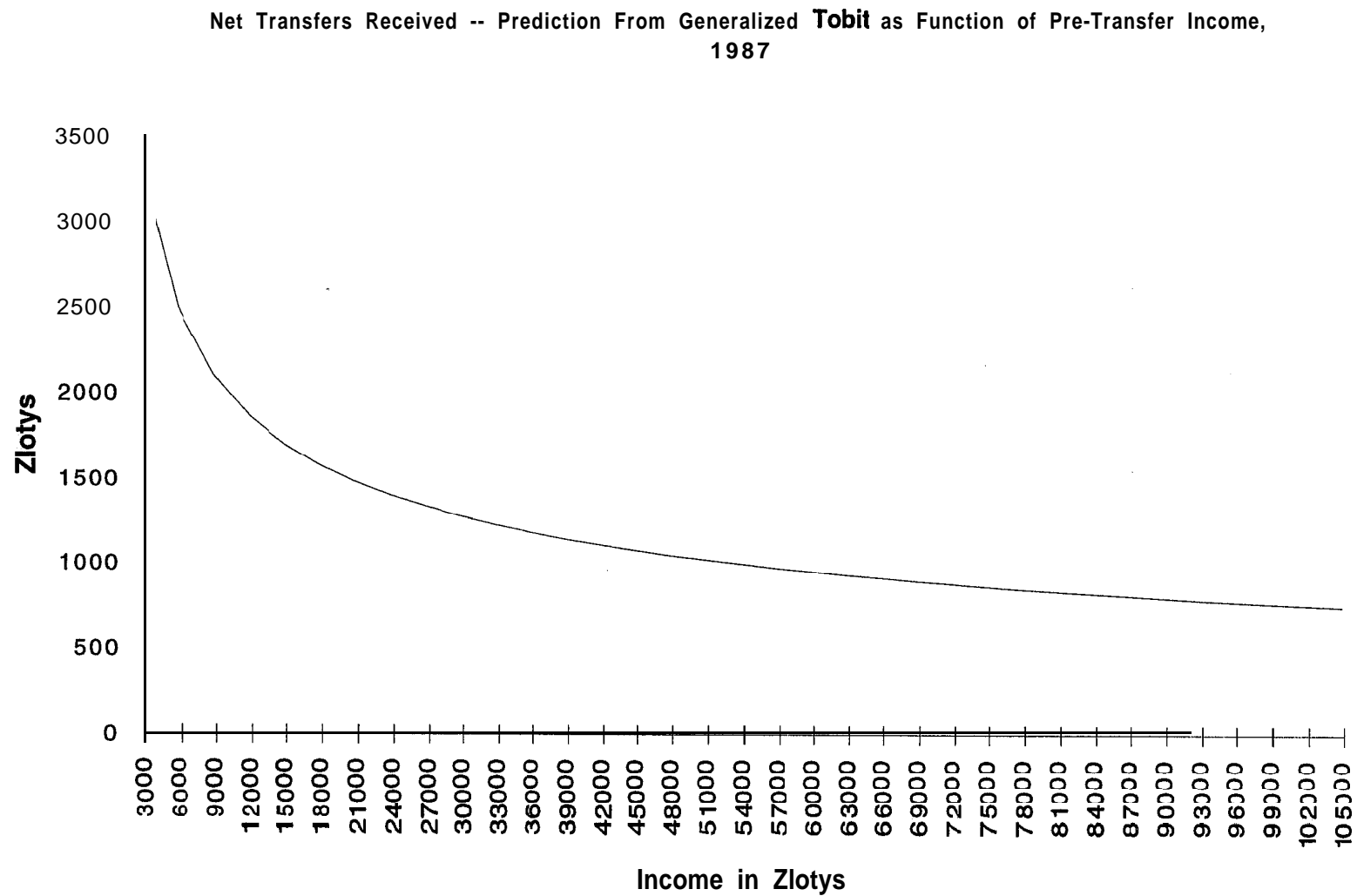
Chart 2

Probability of Net Transfer Receipt as a Function of Head's Age, 1987



Source: Net Transfer Receipt Probit, Table 2, Column 1

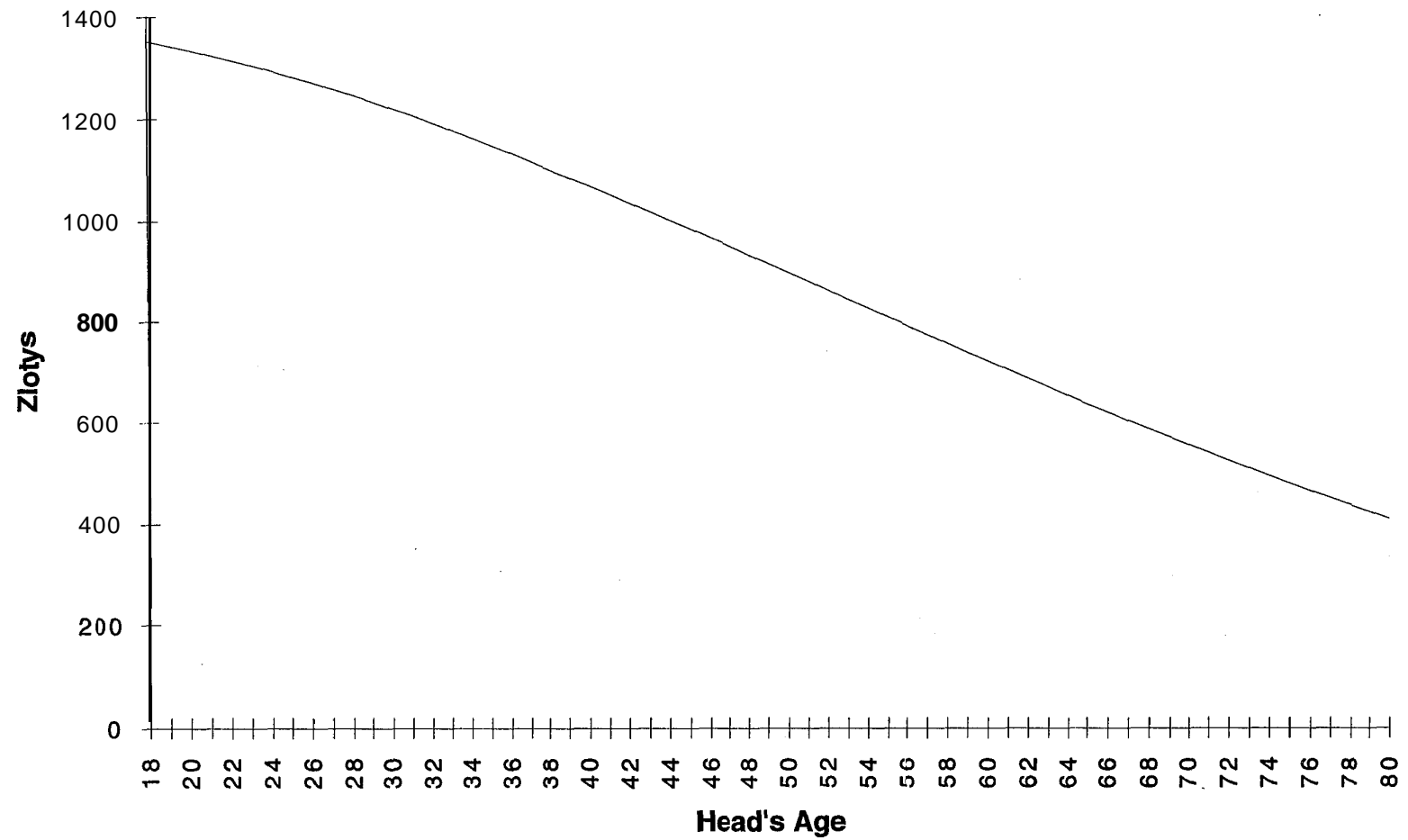
Chart 3



Source: Net Transfer Receipt Generalized **Tobit**. Table 2, Column 2

Chart 4

Net Transfers Received -- Prediction from Generalized Tobit as a Function of Head's Age, 1987



Source: Net Transfers Receipt Generalized Tobit. Table 2, Column 2